

## THE DETERMINATION OF CYANIDE IN APRICOT KERNELS

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There is considerable public awareness and concern over chemicals that are added to food but relatively little awareness of the natural components in food which are potentially harmful to man. The consumption of apricot kernels, which contain the cyanogenetic glycoside amygdalin (laevo-mandelonitrile- $\beta$ -gentiobioside) (Fig. 1), has previously resulted in acute cyanide poisoning. Apricot kernels are currently being promoted as containing an antineoplastic vitamin, Vitamin B<sub>17</sub>, because of the structural similarity of amygdalin and laetrile (laevo-mandelonitrile- $\beta$ -glucuronide).

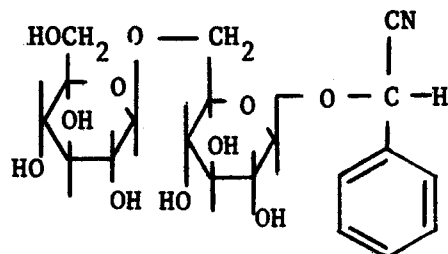


Fig. 1. Structure of amygdalin

To assess the potential toxicity of apricot kernels samples were purchased from "health food" shops and assayed for cyanide by the method of Winkler (Winkler, 1951). This procedure determines the total hydrogen cyanide which can be potentially evolved from the kernels. The ground kernels were acidified after autolysis and the liberated hydrogen cyanide was distilled by a current of steam into a sodium hydroxide solution and then titrated against silver nitrate solution. According to Conn (1969), the autolytic decomposition of amygdalin is mediated by a  $\beta$ -glycosidase and an  $\alpha$ -hydroxynitrile lyase.

The cyanide liberated from the apricot kernels ranged from 1.22 mg/g to 1.42 mg/g. These values are consistent with those obtained by Stoewsand (Stoewsand *et al.*, 1975) and with the toxic dose level (about 48 kernels) reported for humans (Egli, 1977). The alleged antineoplastic activity of apricot kernels could result in their increased consumption. The bitter taste of apricot kernels is a deterrent against acute poisoning, but the hazard from chronic consumption is largely unknown and is worthy of investigation.

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